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IS 11997 (1987): Fenvalerate EC [FAD 1: Pesticides and Pesticides Residue Analysis]



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“Knowledge is such a treasure which cannot be stolen”



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**IS : 11997 - 1987**  
**( Reaffirmed 2002 )**

*Indian Standard*  
**SPECIFICATION FOR  
FENVALERATE EC**

**( First Reprint DECEMBER 1991 )**  
**( Incorporating Amendment No. 1 )**

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**BUREAU OF INDIAN STANDARDS  
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG  
NEW DELHI 110002**

# Indian Standard

## SPECIFICATION FOR FENVALERATE EC

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IS : 11997 - 1987

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**AMENDMENT NO. 2 JULY 1994**  
**TO**  
**IS 11997 : 1987 SPECIFICATION FOR**  
**FENVALERATE EC**

*( Page 4, clause 2.2.5 ) — Delete.*

*( Page 5, clause 4.1 ) — Substitute the following for the existing:*

**'When freshly manufactured material in bulk quantity is offered for inspection, representative samples of the material shall be drawn and tested as prescribed in IS 10627 : 1983 within 90 days of its manufacture. When the material is offered for inspection after 90 days of its manufacture, sampling shall be done as prescribed in IS 10627 : 1983. However, the criteria for conformity of the material when tested, shall be the limits of tolerances, as applicable over the declared nominal value and given under clause 2.3.1 of the standard.'**

**( FAD 1 )**

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**Reprography Unit, BIS, New Delhi, India**

# *Indian Standard*

## SPECIFICATION FOR FENVALERATE EC

### 0. FOREWORD

0.1 This Indian Standard was adopted by the Bureau of Indian Standards on 30 April 1987, after the draft finalized by the Pest Control Sectional Committee had been approved by the Agricultural and Food Products Division Council and the Chemical Division Council.

0.2 Fenvalerate EC is used as an insecticide.

0.3 Fenvalerate EC are generally manufactured to contain 20 percent ( m/m ) of fenvalerate, technical.

0.4 In the preparation of this standard, due consideration has been given to the provisions of the *Insecticides Act*, 1968 and the Rules framed thereunder. However, this standard is subject to the restriction imposed under the Act and Rules, wherever applicable.

0.5 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS : 2-1960\*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

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### 1. SCOPE

1.1 This standard prescribes the requirements and the methods of sampling and test for fenvalerate EC.

### 2. REQUIREMENTS

2.1 **Constituents** — The material shall consist of fenvalerate, technical, dissolved in suitable solvent(s) together with emulsifying agent(s), and with or without stabilizer(s).

2.1.1 Fenvalerate, technical employed in the formulation of this material shall conform to IS : 12003-1987†.

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\*Rules for rounding off numerical values ( *revised* )

†Specification for fenvalerate, technical.



**2.2 Physical** — The material shall comply with the physical requirements specified in 2.2.1 to 2.2.4.

**2.2.1 Description** — The material shall be homogenous and stable liquid. Sediment and/or suspended matter shall be negligible. On dilution with water, it shall readily form an emulsion suitable for spray.

**2.2.2 Cold Test** — No turbidity or separation of solid or oily matter or both shall occur when the material is subjected to the cold test at 10°C as prescribed in 13.1 of IS : 6940-1982\* or at any other lower temperature as agreed to between the purchaser and the supplier. Introduction of a seeding crystal is not necessary for the test.

**2.2.3 Flash Point (Abel)** — When determined by the method prescribed in IS : 1448 [ P : 20 ]-1960†, the flash point of the material shall be above 24.5°C.

**2.2.4 Emulsion Stability** — Any separation including creaming at the top and sedimentation at the bottom of 100 ml of emulsion prepared in standard hard water with 2.0 ml of concentrate for agricultural use, shall not exceed 2.0 ml when tested by the method prescribed in 13.3 of IS : 6940-1982\*.

**2.2.5 Heat Stability** — After treating in accordance with the method prescribed in 13.4 of IS : 6940-1982\*, the material shall comply with the requirement specified in 2.2.1 to 2.2.4 and 2.3.1.

**NOTE** — The material need not be put to heat treatment and testing for requirements specified in 2.2.1 to 2.2.4 and 2.3.1, if the product has crossed half of its shelf-life as ascertained from the date of manufacture and date of expiry declared on the container.

**2.3 Chemical** — The material shall comply with the chemical requirements specified 2.2.1 and 2.3.2.

**2.3.1 Fenvalerate Content** — When determined by the HPLC or GLC Method prescribed in A-1 and A-2 of IS : 12003-1987‡ the observed fenvalerate content, percent ( m/m ), of any of the samples shall not differ from the declared nominal value by more than the percent tolerance limits indicated below:

<i>Nominal Value, Percent</i>	<i>Tolerance, Percent</i>
Up to 9	± 10 } ± 5 }
Above 9 and below 50	± 5 } of the nominal value
50 and above	± 5 } ± 3 }

\*Methods of test for pesticides and their formulations ( first revision ).

†Methods of tests for petroleum and its products: [ P : 20 ] Flash point by abc apparatus.

‡Specification for fenvalerate, technical.

**2.3.1.1** The actual value of fenvalerate content in the formulations shall be calculated to the second decimal place and then rounded off to the first decimal place before applying the tolerance given in 2.3.1.

**2.3.1.2** The average fenvalerate content of all the samples taken shall not be less than the declared nominal content.

**2.3.2 Acidity/Alkalinity** — When tested by the method prescribed in 11.3 of IS : 6940-1982\*, acidity ( as  $H_2SO_4$  ) shall be not more than 0.30 per cent by mass. The product shall not be alkaline to litmus paper when tested according to 11.3.1.1 of IS : 6940-1982\*.

### 3. PACKING AND MARKING

**3.1 Packing** — The material shall be packed according to the requirements given in IS : 8190 ( Part 2 )-1980†.

**3.2 Marking** — The container shall bear legibly and indelibly the following information and any other information as is necessary under the *Insecticides Act* and Rules:

- a) Name of the material;
- b) Name of the manufacturer or trade-mark;
- c) Batch number;
- d) Date of manufacture and date of expiry;
- e) Net mass of contents;
- f) Nominal fenvalerate content, percent ( *m/m* ); and
- g) A cautionary notice worded as in *Insecticides Act* and Rules.

**3.2.1** Each container may also be marked with the Standard Mark.

**Note** — The use of the Standard Mark is governed by the provisions of the Bureau of Indian Standards Act, 1986 and the Rules and Regulations made thereunder. The Standard Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well defined system of inspection, testing and quality control which is devised and supervised by BIS and operated by the producer. Standard marked products are also continuously checked by BIS for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

### 4. SAMPLING

**4.1** Representative samples of the material shall be drawn as prescribed in IS : 10627-1983‡.

\*Methods of test for pesticides and their formulations ( *first revision* ).

†Requirements for packing of pesticides: Part 2 Liquid pesticides ( *first revision* ).

‡Methods for sampling of pesticidal formulations.

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## **5. TESTS**

**5.1** Tests shall be carried out by the appropriate methods referred to in 2.2.2 to 2.2.5, 2.3.1 and 2.3.2.

**5.2 Quality of Reagents** — Unless specified otherwise, pure chemicals and distilled water ( *see* IS : 1070-1977\* ) shall be employed in tests.

**NOTE** — 'Pure chemicals' shall mean chemicals that do not contain impurities which affect the results of analysis.

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\*Specification for water for general laboratory use ( *second revision* ).

*( Continued from page 2 )*

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